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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,210	03/23/2004	Toru Yagi	119202	1905

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EXAMINER

PATEL, JOY

ART UNIT PAPER NUMBER

3766

DATE MAILED: 10/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/806,210

Applicant(s)

YAGI ET AL.

Examiner

Joy P. Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/23/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION***Drawings***

1. The drawings are objected to because elements 12, 13a, 13b, and 26 are not labeled in the block diagram of figure 3. These blocks should be labeled to disclose what these elements are; the reference numerals alone are insufficient. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed

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of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because its length exceeds the 150 word limit. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

3. On page 1, line 7 of the specification, "...there have been researches..." is grammatically incorrect.
4. On page 1, line 7 of the specification, the statement "As such visual restoration aiding device, there has been proposed..." makes the sentence difficult to read and comprehend.

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5. On page 1, line 16 of the specification, it is suggested that "In the case of inducing the visual restoration..." be changed to "In the case of inducing visual restoration..."
6. On page 1, lines 18-19 of the specification, it is suggested that "...electrodes as possible at high density..." be changed to "...electrodes as possible at a high density..."
7. On page 1, lines 18-19 of the specification, it is suggested that "...more clear vision..." be changed to "...clearer vision..."
8. On page 1, line 20 of the specification, it is suggested that "In as state that the..." be changed to "In a state in which the..."
9. On Page 1, line 23 of the specification, it is suggested that "...factor that hinders the visual restoration..." be changed to "...factor that hinders visual restoration..."
10. On page 1, lines 27-28, it is suggested, "The present invention has been made in view of the above circumstances and has an object to overcome..." be changed to "The present invention has been made in view of the above circumstances. It is an object of the invention to overcome..."
11. On page 5, lines 10-11 of the specification, "This arrangement contributes to increase electrode placement density..." should be changed to "This arrangement contributes to an increased electrode placement density..."
Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
13. In regard to claim 3, it is unclear whether the applicant discloses his device to be completely terminating or if it is terminating for a brief period of time. The confusion arises from the author's use of the phrases "...completely terminates the switching..." and "...within a duration needed..." Appropriate correction is required. For purposes of examination, the claim will be read to mean that the switching of the electrodes pauses briefly to allow the patient to recognize the object being viewed.
14. In regard to claim 4, the applicant again uses the phrase "...completely terminates..." but then provides a duration of 1/30 to 1/24 second. For purposes of examination, it claim will be read to mean a pause of 1/30 to 1/24 second.

Claim Rejections - 35 USC § 102

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1, 2, and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Humayun et al. (US 5,935,155).
16. In regard to claims 1 and 2, Humayun discloses, "A visual prosthesis comprises a camera for perceiving a visual image and generating a visual signal..." (Abstract, lines 1-2). Humayun further discloses, "The retinal stimulation circuitry includes a decoder for decoding the visual signal output into a plurality of individual stimulation control signals which are used by current generation circuitry to generate stimulation current signals to be used by an electrode array having a plurality of electrodes forming a matrix" (Abstract, lines 14-20). Humayun further discloses, "The stimulation sites 58 in the array are spaced to provide a level of visual acuity consistent with the ability of the patient to discriminate the activation of adjacent sites" (Column 7, lines 55-57; See also figure 7). Humayun further discloses, "This array 22 can either be a passive element that only serves to transfer the charge in the stimulation pulses to the retinal tissue, or an active network that can control the selection of the stimulation sites using information encoded in its input" (Column 7, lines 50-54). Therefore, it is inherent that the control unit does not simultaneously output the electrical stimulation pulse signals through electrodes arranged within a distance that the electrical stimulation pulse signals outputted through the electrodes would interfere with each other. Furthermore, the controlling

unit would inherently switch between the electrodes that are being used and those that are not being used since the decoded data would require the stimulation of some electrodes at one moment in time, while requiring the stimulation of other electrodes at other moments in time. Therefore, not all of the electrodes would be on all the time, but rather, they would alternate as necessitated by the image being captured and how it was decoded.

17. In regard to claim 5, Humayun discloses, "The retinal stimulation circuitry includes a decoder for decoding the visual signal output into a plurality of individual stimulation control signals which are used by current generation circuitry to generate stimulation current signals to be used by an electrode array having a plurality of electrodes forming a matrix" (Abstract, lines 14-20). Humayun further discloses, "This array 22 can either be a passive element that only serves to transfer the charge in the stimulation pulses to the retinal tissue, or an active network that can control the selection of the stimulation sites using information encoded in its input" (Column 7, lines 50-54). Therefore, the device of Humayun comprises the wiring of an active matrix system.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 3,4, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Humayun et al. (US 5,935,155).
19. In regard to claim 3, the visual restoration device of Humayun would have stop switching temporarily (pause) in order to allow the patient to view the object he/she is looking at. A visual restoration device would inherently have to switch between the electrodes that are being stimulated to allow the patient to see what is occurring around them. If the device stopped switching completely, the patient would be left viewing still frames and be incapable of viewing movement.
20. In regard to claim 4, it is well known in the art that the eye cannot distinguish individual frames when a set of images is sampled at a rate of 24 frames/second or greater. It is also well known in the art that movies are usually sampled at a rate between 24 to 30 frames per second. Therefore, it would have been obvious to one of ordinary skill in the art to modify the device of Humayun to have a sampling rate of 24 to 30 frames per second in order to allow the patient to view the events occurring around him/her in a more fluid, realistic manner.
21. In regard to claim 6, the applicant discloses that a honeycomb pattern is used to ensure that no interference between the pulse signals emitted by the electrodes occurs. However, Humayun discloses that the electrodes

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in his array are spaced at a distance sufficient enough to prevent interference between adjacent electrodes. Therefore, changing the electrode configuration of the device of Humayun into the shape of a honeycomb would have been an obvious choice in design to one having ordinary skill in the art absent any teaching of criticality or unexpected result, since the electrodes would have been spaced sufficiently apart to prevent interference between adjacent electrodes.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy P. Patel whose telephone number is 571-272-5556. The examiner can normally be reached on Monday-Friday 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pezzuto can be reached on (571)-272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Robert E. Pezzuto
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Joy Patel
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